File System Course Introduction

Keywords:

- Fuse/C/C++/Python
- File System

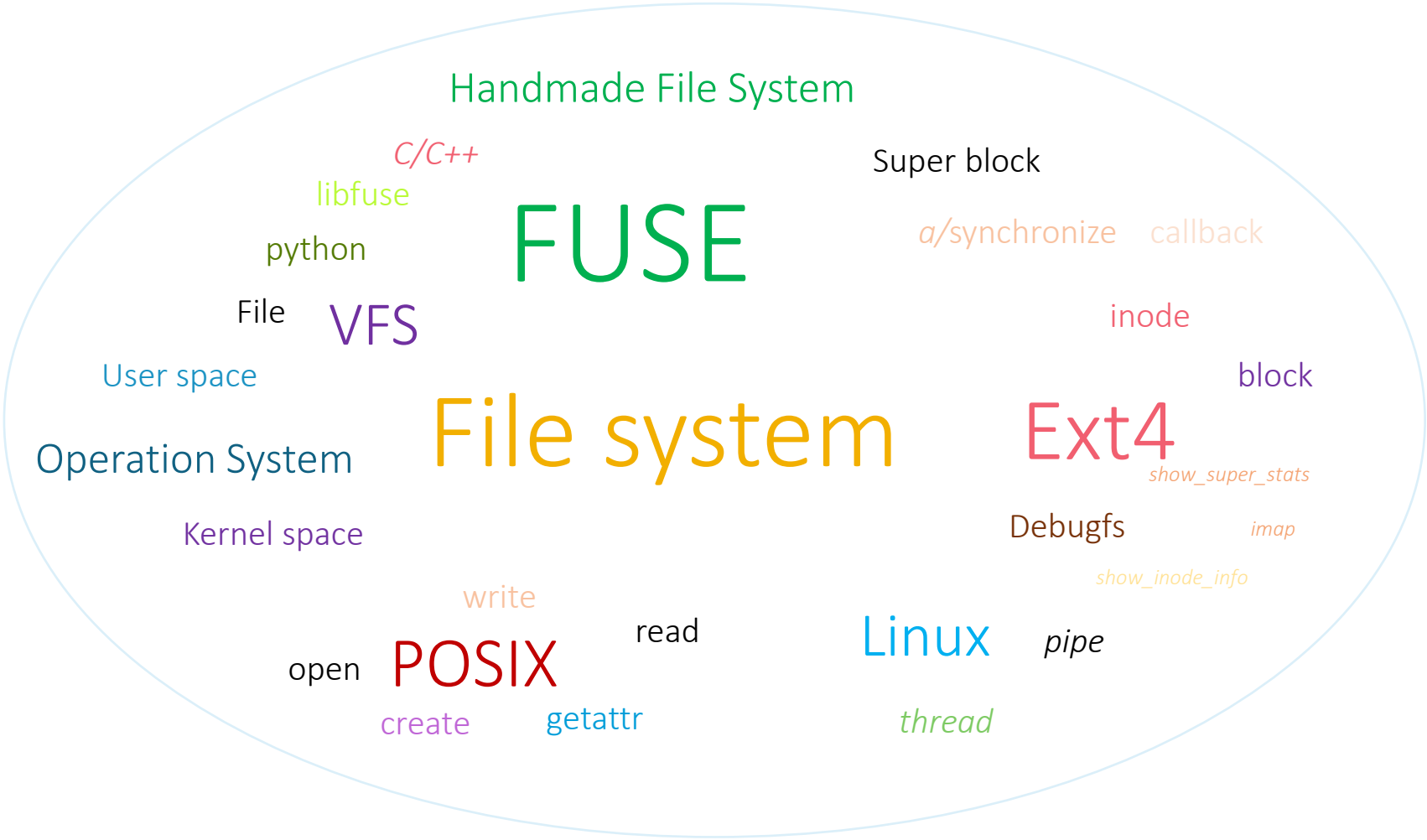
File System Course Syllabus

PREREQISITES: Basic knowledge Operation System.

OBJECTIVES: As a result of the course, you will be able to:

- Get the knowledge of basic rules of design and conceptions in File system;
- Get the knowledge of basic implementations within Ext4;
- Implement your own file system based on FUSE in user space.

Lec	Title	Key Points	Hours
1	File System Introduction	• FS, file, block, inode, VFS • POSIX	1-2
2	Travel in Ext4	• Ext4: super block, inode, ... • Debugfs: show_super_stats, ls, show_inode_info, blocks, imap	1-2
3	Fuse & Lab Preparation (python/c/c++)	• FUSE • Python/c/c++	1-2
4	Lab and Demo	• Demo • Future work	1-2
5	Q&A		


Handmade File System
C/C++
libfuse
python
FUSE
Super block
a/synchronize
callback
File
VFS
inode
User space
block
File system
Operation System
Ext4
show_super_stats
Kernel space
Debugfs
imap
show_inode_info
write
read
Linux
pipe
open
POSIX
create
getattr
thread